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ABSTRACT

The academic success of international students who are admitted to Marshall University's career and technical education (CTE) and other selected graduate degree programs was examined. The academic success of students who were admitted to Marshall based on their Test of English as a Foreign Language (TOEFL) scores was compared to that students who gained admission by completing English-as-a-second-language (ESL) classes. The study sample consisted of 64 females and 62 males from 22 countries. A descriptive/correlational research design was chosen to identify relationships between quantifiable variables such as grade-point averages (GPA), TOEFL scores, and ESL scores. An analysis of the data did not reveal a high association between the CTE graduate students' TOEFL or ESL scores and their first GPAs. This lack of association between TOEFL/ESL score and GPA was interpreted as evidence that both groups were academically prepared when entering college-level studies. Both groups had low attrition rates. The TOEFL students showed a moderate association with the variable country of origin. It was recommended that a class in American culture be made a required part of the ESL program. (Nineteen tables are included. The bibliography lists 21 references. Seven tables providing information about the study sample and study results are appended.) (MN)

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ED 473 756

Assessment of TOEFL Scores and ESL Classes as Criteria for Admission to Career & Technical Education and Other Selected Marshall University Graduate Programs

Nancy E. Person

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ABSTRACT

The purpose of this study was to investigate the academic success of international students who are admitted to Marshall University's Career and Technical Education and other selected graduate degree programs. The study compared those students who entered Marshall University through TOEFL scores and those who completed ESL classes as admission criteria for entrance. One key question was to determine whether either of these groups was academically prepared for college level studies. Another goal was to determine if demographic factors play a role in student success. The convenient sample consisted of 64 females and 62 males from 22 different countries, ranging in age from 23 to 47. A descriptive/correlational research design was chosen to determine relationships between quantifiable variables, such as GPA's, TOEFL scores and ESL scores. Data collected was transcribed into SPSS and analyzed. Results indicate that TOEFL and ESL had low association in the students' first GPA's, TOEFL being significant, which suggests that both groups are academically prepared when entering for college level studies. It was also found that both groups had low attrition rates. TOEFL students showed a moderate association with the variable country of origin correlating demographic factors. Results suggest that TOEFL students and ESL students are academically prepared for graduate studies.

CHAPTER I

INTRODUCTION

Students and faculty from other countries represent a pool of potentially rich resources for campuses. Haywood (2000) states, some institutions make a major effort to recruit international students to enhance the international presence on campus. In addition, many institutions view foreign students as an important source of enrollment and revenue. Most international students are funded from outside the U.S., with 70% covering the costs of their education, usually from personal or family sources. It is estimated that international students annually bring more than 13 billion dollars into the U.S. economy (p. 15). Some studies indicate global trends in higher education, which will double the number of students pursuing university studies abroad from 1.5 million by 2010. The field of international affairs will continue to grow and professionalize, as reflected in the growing number of staff in universities, government offices, and placement agencies with special expertise in facilitating international student mobility (Haywood, 2000, p. 17).

Over 16,000 students attend Marshall University every year. Approximately 50 of these students study full-time each semester in the Learning English for Academic Purposes (L.E.A.P.) at the Center for International Programs. Since 1994, over 400 international students from 64 countries have been admitted to the Undergraduate/Graduate programs at Marshall University. There are four ways that international students may be admitted to Marshall University: achieving a satisfactory score on the Test of English as a Foreign Language (TOEFL); scoring satisfactorily on the Michigan English Language Assessment Battery (MELAB); graduating from the English as a Second Language (ESL) program, and in the case of native English speaking international students demonstrating proficiency on a Standardized Achievement Test (SAT).

International students (63.2%) are admitted to Marshall University through TOEFL testing when they receive a minimum score of 500 for Undergraduate study or 525 for Graduate study. According to the Educational Testing Service (1995), the purpose of the TOEFL test is to evaluate the English proficiency of students whose native language is not English. The TOEFL is recommended for students at the eleventh-grade level or above; the test content is considered too difficult for younger students (p. 9). The TOEFL test was introduced as a computer-based test in July 1998 in many regions of the world (Educational Testing Service, 1999).

There are 16.4% of international students admitted as native English speakers. The remaining international students (20.2%) apply to the L.E.A.P. Intensive English program and enroll in ESL classes. ESL classes are administered through the L.E.A.P. Intensive English program at Marshall University. All students who wish to enroll in L.E.A.P. classes are required by Immigration & Naturalization Services (INS) to study full-time (18 hours) in order to be accepted into the program (Assaf, M. et.al, 1996). Students who are admitted to the L.E.A.P. program must complete the Advanced Level

109 with a score of 83% or better of Intensive English in order to be admitted to Marshall University without a TOEFL score.

Upon the student's arrival into the L.E.A.P. program, he/she is given a Michigan Placement test and placed into the appropriate level of study. There are three levels: Level 107 (Beginning), Level 108 (Intermediate), and Level 109 (Advanced) in the L.E.A.P. Intensive English program. Students receiving a score (0-47) are placed in Level 107; a score (48-74) are placed in Level 108; and a score of (75-100) are placed in Level 109. The L.E.A.P. program also gives an oral speaking test. Once the students are placed into their academic levels, they must successfully complete each level with an 83% or better in order to move to the next level (Clark M. Egnor, Director L.E.A.P. Intensive English Program, personal communication, January 25, 2001).

Background and Setting

According to the Marshall University Graduate catalog (2000-2002), Marshall is a medium-sized American public university that has over 150 years of history with a good regional reputation and seeking national prominence. The university has nine colleges and schools and over one hundred academic programs. Professional, technical, and industrial career studies are available through the various departments of the university (p. 8). Academically admissible students who successfully complete the L.E.A.P. Program are able to enter an undergraduate or graduate degree program at Marshall University without a TOEFL score. Adults with serious intent who can devote their full time to rigorous language training may apply to the L.E.A.P. Program. Students should have previous English language training, however, they can be admitted without functional proficiency and will be required to enroll in a special course that focuses on basic English skills.

As Marshall University conditionally admits academically acceptable students without English proficiency, it is recommended that university-bound ESL students apply to a degree program at the same time they apply to the L.E.A.P Program. Although scholastic test results (e.g. SAT, ACT, GRE, etc.) can usually be submitted after being admitted, in some cases, students may not be conditionally admitted without certain credentials, such as a GMAT score for graduate study in the College of Business.

Statement of the Problem

A goal of Marshall University's L.E.A.P. program is to demonstrate that ESL classes are a reasonably valid predictor of college level success. The purpose of this study was to investigate the success of international students who are admitted to Marshall University's Career and Technical Education, Journalism, Business Administration, Communication Studies, Biomedical Sciences, and Information Systems graduate degree programs. These program majors were chosen because these are the graduate programs most often selected by international students enrolling in Marshall University (Clark M.

Egnor, Director L.E.A.P. Intensive English Program, personal communication, January 28, 2001).

Statement of Objectives

The overall success of international students achieving their educational goals at Marshall University is of great interest to the Center for International Programs. Whether a student is admitted through TOEFL scores or ESL classes and whether they successfully complete graduate degrees in Career and Technical Education, Journalism, Business Administration, Communication Studies, Biomedical Sciences, or Information Systems was the subject of investigation for this study. Therefore, it was the objective of this study to determine whether students who complete ESL classes achieve greater success in their respective graduate degree programs than those students who are admitted into these graduate programs using TOEFL scores for admission. Student success was determined through the first and last semester Grade Point Average (GPA) scores and through the student's program completion rate. The following specific objectives were developed to guide this study:

1) To describe the distribution of first and last GPA's of Career and Technical Education majors and other selected majors.
2) To determine the relationship of students who are admitted through TOEFL scores and their first GPA's.
3) To determine the relationship of students who are admitted after completing ESL classes and their first GPA's.
4) To determine the relationship of students who are admitted through TOEFL scores and their last GPA's.
5) To determine the relationship of students who are admitted after completing ESL classes and their last GPA's.
6) To determine if students who enter Marshall University through TOEFL scores have a higher completion rate than those admitted through ESL classes.
7) To determine what relationships exist between selected demographic factors, such as age, gender, and country of origin of the TOEFL and ESL scores.
8) To determine what relationships exist between selected demographic factors of TOEFL and ESL students in the Career and Technical Education program.

Significance of Study

In conducting the literature review for this study, the researcher was unable to locate previous studies involving a comparison of ESL classes and TOEFL scores as admission criteria to universities. This study allows a basis for further studies to be made and future investigations concerning international students and their academic preparedness. This study focuses on Marshall University graduate students in Career and Technical Education, Journalism, and Business Administration, Communication Studies, Biomedical Sciences, and Information Systems. The study will demonstrate whether ESL

classes are a reliable predictor of success in college level classes, which will benefit many universities that offer English as a Second Language to international students.

Assumptions

This study was based on the following assumptions:

1. Students who enroll into the L.E.A.P. Intensive English program are assumed to have little or no knowledge of English and are placed according to their Michigan placement scores.
2. The international students who are admitted to Marshall University through TOEFL scores are assumed to be English literate and able to function in an American university.

Limitations of Study

The generalizations made from the research study are subject to the following limitations:

1. The population sample was based on only one university.
2. The data collected was data that was obtained from Marshall University's Banner system. There are some discrepancies in the current system regarding how the Admissions Department of Marshall University inputs international students' information upon their admission.
3. The researcher was unable to locate previous studies involving ESL classes and TOEFL scores as admission criteria for admission to American universities to compare results from the study.
4. Because of the scant research data available on ESL classes and TOEFL scores as admission criteria to universities, this study sought to develop important baseline data. Thus, the entire population of the international graduates at Marshall University was surveyed. Consequently, the data do not lend themselves to tests of statistical significance.
5. To address why students do not complete their programs of study, factors such as VISA expirations, availability of jobs, financing, family needs and concerns or other factors beyond the student's control may need to be considered.

Definition of Terms

For clarity of this study, these definitions apply:
Business Administration – a program of study providing emphasis on building a strong fundamental framework and develop skills in managerial problem solving and decision-making.

Career & Technical Education – is a field-based program designed for students who serve in an instructional, training, leadership, or professional role in human services areas of business, industry, government, community agencies or education.

English as a Second Language (ESL) – is a program designed to teach the English language to speakers of other non-native English foreign languages.

Grade Point Average (GPA) – is computed for all graduate course work at Marshall University on a scale of 1.0 (lowest) to 4.0 (highest), thus determining qualifications for graduation.

Immigration & Naturalization Service (INS) – is a government regulatory program that issues I-20 forms to student applicants after meeting admission and financial requirements so that the student can apply for an F-1 visa and also enter the U.S. to study at an American university.

Journalism – is a flexible program designed for students whose career interests involve advertising, broadcast journalism, print journalism, public relations, radio-television, and journalism education.

Learning English for Academic Purposes (L.E.A.P.) – is an intensive English program at Marshall University that requires for full-time admission, 18 hours of intensive study in the following classes: Listening, Oral Communications, Reading, Grammar, and Writing. There are three levels and each level must be completed in order with an 83% or higher grade before continuing to the next level.

Michigan English Language Assessment Battery (MELAB) – is an advanced level "battery" of English language proficiency tests. It is designed for non-native speakers of English who will need to use English for academic purposes.

Michigan placement exam – is a 100 item multiple choice placement exam used by Marshall University's L.E.A.P. Intensive English program to place international students into levels according to their language skills. Students are also given an oral/speaking test for their appropriate placement.

Non-Traditional Student – is a student who is 25 years of age or older.

Test of English as a Foreign Language (TOEFL) – is a computer-based test to evaluate the English proficiency of people whose language is not English. TOEFL tests are required for purposes of admission to more than 2400 colleges/universities in the United States and Canada.

Traditional Student – is a student under the age of 25.

CHAPTER II

REVIEW OF LITERATURE

TOEFL Performance and Success in a Master's Program in Engineering

The TOEFL is universally required of international students seeking admission to many graduate programs in the United States. The purpose of the study by Ayers and Quattlebaum (1992) was to determine the relationship of success of Asian students in a Master's degree program in engineering, as measured by GPA, to scores obtained on the TOEFL and the Graduate Record Exam (GRE). The subjects for this study consisted of 67 Asian students (60 males and 7 females) who received the Master of Science in an area of engineering at Tennessee Technological University. The students were from India or native Chinese speakers. All students completed the TOEFL and the Verbal (GREV), Quantitative (GREQ), and Analytical (GREA) sections of the GRE prior to admission to the institution. The results of the study were presented for the total group. Descriptive statistics and Pearson Product-Moment Correlations between all variables were computed. Application of the t-test indicated there were no significant differences between males and females (Ayers & Quattlebaum, 1992).

The results of Ayers and Quattlebaum's study indicated that the TOEFL score was not an effective predictor of academic success, as measured by total GPA based on all courses required in the program of study. The only significant predictor of success, as measured by GPA, was scores obtained on the GREQ. Although the findings of the study indicated that the TOEFL may be of questionable value in predicting the success of Asian students in engineering graduate programs, it is still considered to be a useful test as a preliminary screening device for determining if a potential student has the minimum communications skills needed to function in an American university. The TOEFL does not measure all of the communication skills needed by a graduate engineering student nor does the GRE. (Ayers & Quattlebaum, 1992).

Analyzing English Placement Tests

Bers and Smith (1990) presented a model for analyzing the reliability and validity of an English placement test that used a holistically scored writing sample. In the past several years, colleges and universities have taken many steps to restore public confidence in higher education. Assessment encompasses a fairly broad category of activities that include placement testing to determine students' skill levels and to ensure that students begin courses at a level commensurate with their skills. Placement testing, especially, has challenged community colleges. Their students may include those whose first language is not English, adult students who want to take a few courses to develop job-related skills or to gain personal enrichment, students who use the community college

as a bridge between four-year institutions, and those who are traditional entering freshman (Bers & Smith, 1990).

Reliability and validity are among the elements measurements experts look for in a good test. Reliability concerns the extent to which a test, or any form of measurement, yields consistent results. Validity refers to the extent to which a test measures what it is supposed to measure. Both are relevant to placement testing. Reliability, or consistency, is particularly important if different forms of the same test are used, if the same test is taken at two different times, or if there are multiple raters/examiners. Validity can be explored in a number of ways, including examining test content and establishing criterion-related measures. Content validity is the extent to which the test covers a specified domain or content area. Using an essay test to determine students' English and composition skills demonstrates content validity. Criterion-related validity involves estimating some important form of behavior (such as writing performance in class) that is external to the measurement device used (Bers & Smith, 1990)

Bers and Smith (1990) conducted a study from which data was obtained from 4,284 (of which 783 are ESL students) two-year college students who took writing skills assessment tests during 1986 and 1987. Information obtained included the student's gender, ESL status, educational aspirations, form of test administered, raters' test scores, course placement, and course performance. The sample contained 2,152 males and 1,946 females. There were eight test forms used in the study. Only 1,779 (41.5%) of the students were placed in English 101 (regular college English course). The remaining students were placed as follows: English 051 (13.8%) and English 052 (34.3%), both of which are remedial courses; English 075 (6.1%) and English 076 (4.2%), both of which are ESL courses. The researchers found that it is important to note that intent, or the seriousness with which students approached college, was highly important, particularly for remedial students. This suggests that personal factors, in addition to ability, are integral to course performance.

Predictors of College Success: Traditional and Non-Traditional Students

Classrooms have changed over the years. There is more diversity, both ethnically and with respect to age. Traditional (age 23 and under) and nontraditional (age 25 and over) full-time undergraduates were assessed in a study conducted by Spitzer (2000). The goal of this research was to determine which personal and learning dimensions best predicted GPA and career decidedness for traditional and nontraditional students and to determine if academic performance and career development were separate processes. The study assessed five personal dimensions, two learning dimensions, and two collegiate goals (GPA and career decidedness). Multiple regressions assessed which dimensions predicted the two collegiate goals. Significant predictors were generally the same for both traditional and nontraditional students (Spitzer, 2000, p. 82-97).

Academic efficacy, self-regulation, and social support were positive predictors of GPA. The study found nontraditional students and females perform better academically

and are more decided about their career goals. Their active participation on campuses provides energy and models for other students. The study also showed that academic success and career development are largely separate processes. Success in one area does not predict success in the other. Thus, colleges need to create and maintain programs that promote student development in each area (Spitzer, 2000, p. 82-97).

Finally, the predictors for academic success and career decidedness are generally the same for all students. Separate programs or services are not needed for traditional and nontraditional students; the same programs will benefit all students (Spitzer, 2000, p. 82-97).

Language Proficiency and Academic Success

Bosher and Rowekamp (1992) conducted a study in the General College at the University of Minnesota. There has been a growing awareness and concern in recent years about the language proficiency and academic preparedness of refugee/immigrant students at the post-secondary level. Bosher and Rowekamp investigated the relationship between English language proficiency, as measured by standardized language proficiency tests, educational background in L1 (first language) and L2 (second language), length of residency in the United States, and academic success, as measured by second-year GPA.

The subjects were 52 students enrolled in an academic "bridge" program for refugee/immigrant students at the University of Minnesota. Basic information was collected about the students from various sources: the Michigan English Language Assessment Battery (MELAB); a school profile questionnaire, the Michigan Test of English Language Proficiency; the Michigan Aural Comprehensive Test; and test scores on various academic aptitude examinations (Bosher & Rowekamp, 1992).

The results of their study showed a negative correlation between years of education completed in the United States, length of residency in the United States and academic success. The most important predictor of academic success was the number of years of schooling completed in the student's native country, followed by the student's objective score on the MELAB. The results suggested that the refugee/immigrant students at highest risk at the post-secondary level are those who experienced interruption in their education and completed high school in the United States (Bosher & Rowekamp, 1992).

Relationships of GRE Scores to First-Year Grades for Foreign Graduate Students

In a study conducted by Wilson (1986), the validity of the Graduate Record Examinations (GRE) was examined for foreign students enrolled in U.S. graduate schools. The subjects in the study included 1,353 foreign students for whom English was a second language (ESL) and 42 foreign students whose native language was English.

The relationships between college departments' scores on the GRE General Test and first year average grades were examined for three populations: (1) foreign ESL students who were heterogeneous with respect to linguistic, cultural, and educational background; (2) subgroups with homogeneous country of origin and background variable; and (3) subgroups classified according to English proficiency, as indicated by Test of English as a Foreign Language (TOEFL); GRE verbal, analytical, and quantitative scores; and self-reported English language proficiency (Wilson, 1986).

The students were highly selected and represented mainly quantitative departments of study. The majority of the students were Asian; about half were from India, Taiwan, or Korea. The results for these samples were comparable to validity data for American students. In the quantitative fields of study, quantitative and analytical scores were the strongest predictors; in verbal fields, verbal scores were strongest. Both the GRE verbal and TOEFL scores had parallel patterns of validity (Wilson, 1986).

Transitioning Adult ESL Learners to Academic Programs

In a study conducted by Rance-Roney (1995), she stated that few of the English as a Second Language (ESL) participants in adult education classes move on to academic ESL programs that prepare them for content area study or general educational development (GED) or high school equivalency instruction.

The ESL literacy curriculum is currently mismatched with GED and academic ESL curricula in purpose, content, and context. Adult ESL and transitional programs can help students bridge this gap by providing them with: (1) motivation and belief in self-worth to face the challenges of academic and administrative demands; (2) knowledge of how to transition to the norms of the academic community; (3) conceptual development and critical thinking skills such as synthesis, analysis, and evaluation; (4) greater focus on language accuracy and careful language use; (5) extensiveness in reading and writing, and multiple skill integration thematically organized for in-depth study; (6) development of a larger vocabulary corpus centered on less-frequently-used academic terminology; and (7) integration and transfer of first-language (L1) skills and use of L1 in learning strategies (Rance-Roney, 1995).

Students in ESL Classes: A Community College Experience

Rosberg (1983) at Kirkwood Community College conducted a study to determine if English as a Second Language (ESL) courses assist students and increase the likelihood of their academic success. The academic records of 263 students enrolled in the ESL program as foreign students between August 1978 and June 1982 were examined to determine students' sex, age, country of origin, Michigan English Proficiency Examination (MEPE) or Test of English as a Second Language (TOEFL) scores, number of ESL courses taken, major, grade point average (GPA), length of enrollment, and status upon leaving the college (Rosberg, 1983).

The findings from the study included the following: (1) 85% of the students were between 17 and 22 years of age; (2) 82.5% were male; (3) over 56% were enrolled in liberal arts programs; (4) the majority were academically successful, with only 4.18% achieving GPA's of less than 1.75; (5) the higher the TOEFL or MEPE score at the time of college entry, the higher the GPA attained; and (6) 63.6% of the students had not graduated or transferred, nor were they currently attending Kirkwood (Rosberg, 1983).

The evaluation found no clear patterns concerning the effect of ESL classes upon student success, and concluded that further research was needed concerning the value of and needs met by the ESL program. The high attrition rate among ESL students was felt to be significant and to require greater attention (Rosberg, 1983).

Measuring ESL Subjects' Ability to Perform Piagetian Concrete Operations

The research reported in a paper by Perkins (1986), was concerned with the ability of students of English as a Second Language (ESL) to apply cognitive skills in reading. His paper focused on (1) a validation study of an experimental test designed to measure Piagetian concrete operations in reading and (2) the effects of the paragraph types (additive or multiplicative, classification or seriation) and the item types (easy or difficult, emphasizing intension or extension) in the Piagetian test.

The subjects in the study were 28 students of various language backgrounds enrolled in full-time intensive English classes at a university ESL center. The questions following the paragraphs were either easy or difficult in terms of the number of logical steps required to process them, and they emphasized either intension or extension. Analysis of the students' responses to the questions found that all four factors had significant effects, with some significant interactions. Overall, the Piagetian test was found to have higher construct validity than the Test of English as s Foreign Language (TOEFL) in measuring the application of logical skills to reading (Perkins, 1986).

Factors Affecting Oral Classroom Participation of International Graduate Students In An ESL Setting

A problem of growing concern in higher education is the inability of international graduate students in ESL settings to quickly adjust them to active classroom participation in terms of speaking up in academic content courses. One of the obvious facts is that for most international graduate students English was learned primarily as an academic subject. Even though most of them have a fairly good command of English as shown in passing the TOEFL requirement, there is still a gap between their linguistic knowledge and language performances in highly demanding academic content courses in which English is the medium of instruction (Liu and Kuo, 1996).

A study performed by Liu and Kuo investigated the salient factors both affectively and social-culturally that contribute to the second language learners' oral classroom participation in their academic content courses. The accessible population was 337 international graduate students enrolled in both their academic programs and in either the ESL Composition Program or the Spoken English Program in Winter Quarter at Ohio State University (Liu and Kuo, 1996).

A survey was administered in the form of a six-part questionnaire addressing questions of risk-taking, sociability, comfort about speaking up, motivation for keeping silent, strategies for keeping silent and culture alienation. The results imply that international graduate students are highly motivated to immerse themselves in the target culture and that they have the potential to speak up in academic content courses. They are, however, overcautious in risk-taking and socializing, partly because of their sense of inferiority in making mistakes in the presence of native speakers, and partly because of their anxiety and tension in communication in English. They consider "understanding" to be a priority at the expense of "oral participation," and they use different strategies in keeping silent in class to "save face." The survey also implies a relationship between the learners' language proficiency and their oral classroom participation in academic content courses (Liu and Kuo, 1996).

Summary

The researcher has little evidence to compare this study to the literature reviewed, because of the scant research available. However, Ayers and Quattlebaum's (1992) study did show that TOEFL scores were not a successful predictor of academic success in their study of graduate engineering students. The only significant predictor of success in the Ayers and Quattlebaum (1992) study was that as measured by the GREQ.

Since academic preparedness is a key purpose of this study, the analysis of English placement tests is of great interest to the researcher. Bers and Smith (1990) stated that reliability and validity are among the elements measurements experts look for in a good test. Both the TOEFL and Michigan placement exam show reliability and validity.

The researcher also found that the Bers and Smith (1990) study was of great importance, in that the intent and seriousness of the students plays an important role in student performance. Bers and Smith (1990) concluded that one important predictor of academic success was the number of years of schooling completed in the student's native country. This study would lead the researcher to believe that the student's first language (L1) proficiency has a great affect on the students' second language (L2) proficiency. The ESL program would expand on the student's prior knowledge skills. The L1 and motivation also play an important role in the study conducted by Rance-Roney (1995) when students in adult education move to academic ESL programs that prepare them for further study. The L1 may be an indicator for academic success concerning cultural differences among international students and their academic success. According to Spitzer (2000) non-traditional students and females perform better academically and are

more decided about their career goals. Therefore, age and gender may play key roles in a student's success in graduate school.

A study conducted by Bosher and Rowekamp (1992) concluded the most important predictor of academic success was the number of years of schooling completed in the student's native country, followed by the student's objective score on the MELAB. Liu and Kuo (1996), stated "that the inability of international graduate students in ESL settings with regards to their classroom participation was that most international graduate students learn English as an academic subject."

However, the study conducted by Rosberg (1983) to determine if ESL courses assisted students and increased their likelihood of academic success is mostly related to this study. Rosberg found no clear patterns concerning the effect of ESL classes upon student success. Because of the high attrition rate, his study concluded that over half of the students had not graduated or transferred to other colleges. His study allows for the further investigation and is the purpose of this study.

CHAPTER III

METHODOLOGY

Population and Sample

The population in this descriptive/correlational study was a convenient sample consisting of the entire international student population of Marshall University from 1994 to 2000. Over four hundred students were accepted at Marshall University during that time frame. The total graduate student population was 218. The non-random sample population consisted of 126 graduate students. The non-random sample for this study involved Career and Technical Education and five other graduate programs. These programs were selected because these are the fields of study the majority of international students seek admission to. The graduate programs selected consist of the following number of students: Career and Technical Education (20), Journalism (26), Business Administration (36), Communication Studies (15), Biomedical Sciences (15), and Information Systems (14). The sample population originated from 22 different countries. The vast majority of these students came from China (56), Japan (12), Thailand (11), Saudi Arabia (9), Taiwan (8), India (8), Spain (4), Egypt (2) and 14 other countries (Appendix A-1) The gender of the sample population consisted of 64 females and 62 males (Appendix A-2), ranging in age from 23 to 47 (Appendix A-3).

Instrumentation

Test of English as a Foreign Language (TOEFL)

The purpose of the TOEFL test is to evaluate the English proficiency of people whose native language is not English. In 1998-1999, more than 300,000 people registered to take the computer-based test. TOEFL scores are required for purposes of admission by more than 2400 colleges and universities in the United States and Canada. The test is also used by institutions in other countries where English is the language of instruction. In addition, government agencies, scholarship programs, and licensing/certification agencies use TOEFL scores to evaluate English proficiency. The TOEFL test was introduced as a computer-based test in July 1998 in many parts of the world. The computer-based test is given in individual testing stations containing a computer and headphones. The test has four sections, all of which are mandatory: listening, structure, reading and writing (Educational Testing Services, 1999).

Reliability and Validity of TOEFL Scores

A study testing the reliability of TOEFL scores was performed on four forms using a hybrid Item Response Theory (IRT) model. It was found that there was very

little difference between their overall reliability when the test items were assumed to be independent and when their dependence was modeled. A larger difference in reliability was found when test sections were analyzed individually. There was as much as a 40% overestimate in reading comprehension test of the newest form of TOEFL showing the most local dependence (Wainer, 1997).

The reliability of TOEFL scores is estimated using a slight modification of Cronbach's coefficient alpha. This measure of internal consistency estimates the sort of test-retest reliability. The new form's 30 independent items yield a reliability of .87. From this, the researcher computed that 13 of them would have a reliability of .71. The independent items of the older form perform essentially identically to those in the newer one (Wainer, 1997).

In conclusion, the researchers findings were straightforward. TOEFL scores are extraordinarily reliable. The minor changes in its structure that included more items with extensive local dependence have not lowered reliability to any appreciable degree (Wainer, 1997).

TOEFL Test

The TOEFL is designed to assess the English language skills of persons whose native language is not English and who are applicants for admission to American colleges and universities. There are five subtests: Listening comprehension, English Structure, Vocabulary, Reading Comprehension, and Writing. Reliabilities, based on K-R 20, are relatively substantial, ranging from .84 for Reading Comprehension to .91 for Vocabulary. For the total test the reliability was .97 (Chase, 1972, p. 260-275).

Studies showing the validity of TOEFL as a predictor of later criterion performance, typically grade point average, produce much lower correlations than do the concurrent validity studies. Validity of the TOEFL test is reflected in three types of studies: concurrent validity, which ranges from .70 to .80; construct validity, which is obscure because of little evidence; and predictive validity, which ranges from .17 to .26. These correlations are, in fact, so low (e.g., .17 at the University of California, .26 at the University of Washington) as to suggest that the test may be of almost no value as a predictor of grade achievement (Chase, 1972, p. 260-275).

Michigan English Language Assessment Battery (MELAB)

MELAB is an advanced level "battery" (or group) of English language proficiency tests. It is for adult non-native speakers of English who will need to use English for academic purposes at the college and university level. The MELAB is mainly for students who are applying to universities in the United States and Canada where the language of instruction is English. The MELAB is also administered to professionals who will need to use English in their work: for example to medical doctors who come to the

U.S. for research or advanced training, to engineers who come to the U.S. for on-site training at large manufacturing companies (English Language Institute, 1999-2000).

Michigan English Language Assessment Battery (MELAB)

The MELAB test is a 100-item multiple-choice test, which is designed for quick placement of students into homogeneous ability levels. Four language areas are covered: listening comprehension, recognitional knowledge of grammar, reading vocabulary, and general reading comprehension. Student responses are marked on a separate answer sheet and scored on a "rights only" basis. The cost of the test is relatively minimal at $10 per 20 tests and 100 answer sheets for $4. Results are manually scored. There is no training requirements needed for scoring or interpreting results; the test has an answer key and scoring guidelines. No figures were given for validity. This test appears to have very satisfactory reliability and adequate validity. (Clark, 1978, p.102-111). There are seven forms (B through H) for the MELAB test and based on six of the forms, K-R 21 reliability coefficients were .92 or greater. Generally, the MELAB test is an excellent example of item construction in the area of English as a foreign or second language. The MELAB test has some potential for predicting the performance of graduate students placed in different instructional situations and in courses with varying requirements for using English. However, these results do not provide a firm basis for appraising the predictive validity of the MELAB test separately. Although the quantity and quality of its research under-spinning do not compare with those of the TOEFL, the MELAB test should be considered as alternative to it, particularly if users are willing to supplement its results with measurements of listening comprehension, written composition, or speaking. (Clark, 1978, p.102-111).

The most important validity data are derived from consecutive administrations of the TOEFL, and an unpublished form of the MELAB test to foreign students at four colleges (Ns, 29 to 108). Correlation coefficients between the two tests are reported in the .80s. Estimated correlations coefficients between the two tests for uncurtailed range of the TOEFL are in the low to mid-90s. These coefficients are remarkably high, particularly considering that the TOEFL has additional subsets of listening comprehension and writing ability. These findings tend to establish a good case for the concurrent validity of the MELAB test (Clark, 1978, p. 102-111).

Design

A descriptive/correlational research design was chosen in order to determine whether, and to what degree, a relationship exists between two or more quantifiable variables (TOEFL, ESL, completion of major, age, gender, country of origin, etc.). The correlation coefficient used was Pearson's *r*. According to Gay and Aitasian, (2000) the purpose of a correlational study is to determine relationships between variables or to use these relationships to make predictions. The degree of relationship is expressed as a

correlation coefficient (Pearson's *r*). If a relationship exists between two variables, it means that the scores within a certain range on one variable are associated with scores within a certain range on the other variable. Two (or more) scores are obtained for each member of the sample, one score for each variable of interest, and the paired scores are then correlated. A correlation coefficient indicates the size and direction of a relationship (p. 321-323).

The Pearson *r* is used when both variables to be correlated are expressed as continuous data such as ratio or interval. Since most instruments used in education, such as achievement measures and personality measures, are treated as being interval data, the Pearson *r* is usually the appropriate coefficient for determining relationship. Further, since the Pearson *r* results in the most precise estimate of correlation, its use is preferred even when other methods may be applied (Gay, 2000, p. 329).

Data Collection

After reviewing the Mental Measurements Yearbooks, the researcher had found that both the TOEFL tests and the MELAB tests consisted of estimated elements of reliability and validity. In December 2000, a request was submitted to the Senior Database Administrator of Computer Services at Marshall University. The researcher requested the names of all students classified as International status. The data collected for the study included: student name, country of origin, level, (graduate/undergraduate), gender, date of birth, current major, first and last term enrolled, graduation date, degree major, and first and last GPA. This information was collected from Marshall University's Banner 2000 database system.

Upon receiving the database printout from Computing Services, a comparison was done with the database from L.E.A.P Intensive English program. The L.E.A.P. database includes all those students who have been admitted into ESL classes at Marshall University. This comparison allows the researcher to separate the students into three categories: ESL students and scores, TOEFL students and scores, and Native English speaking students and scores. Microsoft Access 2000 was utilized for the L.E.A.P. database processing.

Data Analysis

Data collected was analyzed by SPSS 10.0 (Statistical Package for Social Sciences) and summarized using descriptive statistics (i.e. means, standard deviations, frequencies and percentages). Correlations were performed using Pearson's Product-Moment.

Once the comparison of both Banner and L.E.A.P. databases was completed, the researcher cross-referenced the old program codes with the new program major codes.

Since the study is over a six-year period, Marshall University had since changed program codes and this conversion was required by the researcher to obtain accurate programs of study. The old/new codes were obtained from the Admission office and the Graduate College office. The data collected from both Banner 2000 and Microsoft Access 2000 was input into SPSS for data analysis.

The researcher discovered upon data entry that TOEFL Scores consisted of paper-based and computer-based scores. All scores were converted to paper-based scores according to Educational Testing Services (ETS) Concordance Table (Appendix B-1). It was further noted that ESL scores were collected in percentages and these scores were converted to ETS Scores (Sax, 1997). According to Sax (1997), ETS scores have a mean of 500 and standard deviation of 100. The relationship among the various standard scores and percentiles are presented in Appendix B-2.

CHAPTER IV

FINDINGS AND DISCUSSIONS

Over half (63.7%) of all international students (n=126) in the study are from China (45.2%), Japan (9.7%), and Thailand (8.9%) as shown in Appendix A-1. The gender of all international students (n=126) in the study is male (49.2%), and female (50.8%) as shown in Appendix A-2. The range in age of the participants (n=126) is from 23 to 47 years, with the mean (29.43), median (29.00) and mode (29) as shown in Appendix A-3.

Table 1 shows that most ESL students (n=39) in the study are from Thailand (n=11) and Saudi Arabia (n=9).

Table 1:
Frequency and Percent Distribution of ESL Students by Country of Origin

Country	Frequency	Percent
China	6	15.4
Japan	5	12.8
Thailand	11	28.2
Saudi Arabia	9	23.1
Taiwan	3	7.7
Spain	1	2.6
Fourteen Other Countries	4	10.3

The gender of ESL students (n=39) in the study consisted of male (46.2%) and female (53.8%) as shown in Table 2.

Table 2:
Percent Distribution of ESL Students with Respect to Gender

Gender	Frequency	Percent
Male	18	46.2
Female	21	53.8

The range in age of ESL students (n=39) is shown in Table 3. Ages ranged from 24 to 47 years.

Table 3:
Frequency and Percent Distribution of ESL Students by Age

Age	Frequency	Percent	Age	Frequency	Percent
24	5	12.8	32	2	5.1
25	2	5.1	33	1	2.6
26	3	7.7	34	2	5.1
27	3	7.7	38	1	2.6
28	5	12.8	41	1	2.6
29	10	25.6	43	1	2.6
31	2	5.1	47	1	2.6

The majority of TOEFL students (n=86) originated from China (58.1%), India (9.3%), and Japan (8.1%) as shown in Table 4.

Table 4:
Frequency and Percent Distribution of TOEFL Students by Country of Origin

Country	Frequency	Percent
China	50	58.1
Japan	7	8.1
Taiwan	5	5.8
India	8	9.3
Spain	3	3.5
Egypt	2	2.3
Fourteen Other Countries	9	10.5
Unknown*	2	2.3

*Country of origin was not listed in Marshall University Banner 2000 system

TOEFL students (n=86) showed an equal distribution of gender consisting of male (51.2%) and female (48.8%) as shown in Table 5.

Table 5:
Percent Distribution of TOEFL Students with Respect to Gender

Gender	Frequency	Percent
Male	44	51.2
Female	42	48.8

The range in age of TOEFL students (n=86) is shown in Table 6. Ages ranged from 23 to 44 years.

Table 6:
Frequency and Percent Distribution of TOEFL Students by Age

Age	Frequency	Percent	Age	Frequency	Percent
23	4	4.7	32	5	5.8
24	10	11.6	33	2	2.3
25	8	9.3	34	4	4.7
26	5	5.8	35	4	4.7
27	4	4.7	36	2	2.3
28	8	9.3	37	4	4.7
29	8	9.3	39	1	1.2
30	8	9.3	40	1	1.2
31	7	8.1	44	1	1.2

The initial research objective was to describe the distribution of first and last GPA's of Career and Technical Education and other selected majors. Results indicate first GPA's (n=119) and last GPA's (n=108) were recorded. The first and last GPA's are shown in Table 7.

Table 7:
Comparison of First and Last GPA's of Selected Majors

Graduate Major	First GPA			Last GPA		
	M	SD	n	M	SD	n
Career & Technical Education	3.7494	.6271	18	3.8589	.3751	19
Biomedical Sciences	3.6047	.6061	15	3.4083	.8003	6
Business Administration	3.5109	.4762	34	3.5115	.5058	34
Communication Studies	3.5760	.4312	15	3.3679	.4670	14
Information Systems	3.4421	.5337	14	3.4992	.4262	13
Journalism	3.3813	.5155	23	3.6318	.4467	22
TOTAL	3.5339	.5294	119	3.5713	.4926	108

The results indicate that Career and Technical Education majors had a higher first GPA with a mean score of 3.749 and SD of .627. The results also indicated the Career and Technical Education majors had a higher last GPA with a mean score of 3.859 and SD of .375. Journalism resulted in the lowest first GPA with a mean score of 3.381 and SD of .516. Communication Studies results revealed the lowest last GPA with mean score of 3.368 and SD of .467.

TOEFL students accounted for over 60% of all students in the study, as shown in Table 8. The ESL students represented over 30% of the sample, with Native English speaking students showing less than 10 percent.

Table 8:
Percentage of ESL, TOEFL, and Native English Speakers in Sample

Student	Frequency	Percent
ESL	39	31.0
TOEFL	86	68.3
Native English	1	0.8

The second research objective was to determine the relationship of students who are admitted through TOEFL scores and their first GPA's. A Pearson Product-Moment correlation coefficient was calculated for the relationship between TOEFL students and their first GPA's. Davis' (1971) conventions were used to describe the measures of association (Table 9).

Table 9:
Conventions Used to Describe Measures of Association

Coefficient	Description
.70 or higher	Very Strong Association
.50 to .69	Substantial Association
.30 to .49	Moderate Association
.10 to .29	Low Association
.01 to .09	Negligible Association

Source: Davis, (1971).

Correlation of TOEFL scores and First GPA, in Table 10, revealed a low positive association (.266*) at p (< .05) indicating a significant relationship. This suggests that TOEFL students are prepared for first semester academic content courses.

Table 10:
A Pearson Correlation of TOEFL Scores and First GPA's

		TOEFL	First GPA
TOEFL	Pearson Correlation	1.000	.266*
	Sig. (2-tailed)	--	.016
	n	85	82
First GPA	Pearson Correlation	.266*	1.000
	Sig. (2-tailed)	.016	--
	n	82	119

* Correlation is significant at the 0.05 level (2-tailed)

The third objective was to determine the relationship of students who are admitted through ESL classes and their first GPA's (n=35), which are recorded in Table 11.

Table 11:
A Pearson Correlation of ESL Scores and First GPA's

		ESL	First GPA
ESL	Pearson Correlation	1.000	.127
	Sig. (2-tailed)	--	.469
	n	39	35
First GPA	Pearson Correlation	.127	1.000
	Sig. (2-tailed)	.469	--
	n	35	119

Correlation of ESL scores and First GPA produced a low positive association (.127) that was not significant at p (>.05) indicating that ESL students also are academically prepared.

The fourth objective was to determine the relationship of students who are admitted through TOEFL scores and their last GPA's A Pearson correlation coefficient was calculated for the relationship between TOEFL students and their last GPA's (n=72). Results indicate less than negligible association between TOEFL scores and students' last GPA's (Table 12).

Table 12:
A Pearson Correlation of TOEFL Scores and Last GPA's

		TOEFL	Last GPA
TOEFL	Pearson Correlation	1.000	.009
	Sig. (2-tailed)	--	.942
	n	85	72
Last GPA	Pearson Correlation	.009	1.000
	Sig. (2-tailed)	.942	--
	n	72	108

Objective five was to determine the relationship between ESL students and their last GPA's (n=35) and was calculated using Pearson's *r* (.029) resulting in negligible association according to Davis' conventions. The results are shown in Table 13.

Table 13:
A Pearson Correlation of ESL Scores and Last GPA's

		ESL	Last GPA
ESL	Pearson Correlation	1.000	.029
	Sig. (2-tailed)	--	.867
	n	39	35
Last GPA	Pearson Correlation	.029	1.000
	Sig. (2-tailed)	.867	--
	n	35	108

The sixth objective was to determine if students who enter through TOEFL scores have a higher success of completion rate than those admitted through ESL classes. Success was determined through the graduation date of each student.

Results indicate that TOEFL students (n=86) who completed their degree programs (n=62) had a successful completion rate of over 70 percent as shown in Table 14.

Table 14:
Percent Distribution of TOEFL Students and Success of Completion

Date	Frequency	Percent	Date	Frequency	Percent
05/06/00	5	5.8	05/10/97	5	5.8
07/07/00	1	1.2	08/15/97	2	2.3
08/11/00	1	1.2	12/16/97	2	2.3
12/12/00	6	7.0	05/09/98	2	2.3
05/13/95	3	3.5	07/10/98	1	1.2
12/15/95	4	4.7	08/14/98	1	1.2
05/11/96	1	1.2	12/15/98	2	2.3
07/12/96	2	3.2	05/08/99	13	15.1
08/16/96	1	1.2	08/13/99	2	2.3
12/13/96	2	2.3	12/14/99	4	4.7
---	2	2.3			
TOTAL				62	72.1

To address why students do not complete their programs of study, factors such as VISA expirations, availability of jobs, financing, family needs and concerns or other factors beyond the student's control may need to be considered.

Objective six also addresses the ESL students and their success of completing their respective majors of study. The results are indicated in Table 15.

Table 15:
Percent Distribution of ESL Students and Success of Completion

Date	Frequency	Percent	Date	Frequency	Percent
---	1	2.6	12/16/97	3	7.7
05/06/00	3	7.7	05/09/98	4	10.3
12/12/00	3	7.7	12/15/98	1	2.6
08/18/95	2	5.1	05/08/99	3	7.7
12/13/96	1	2.6	08/13/99	2	5.1
05/10/97	2	5.1	12/14/99	1	2.6
08/15/97	1	2.6			
TOTAL				27	69.2

According to Table 15, ESL students (n=39) that completed their respective programs of study (n=27) are over 60%. Both the TOEFL and ESL students had a completion rate of over 65%. However, TOEFL students do had a slightly (2.9%) higher success rate of completion than ESL students.

The seventh objective was to determine what relationships exist between demographic factors and the student's TOEFL or ESL scores. Table 16 shows correlations between ESL student scores, age, gender and country of origin.

Table 16:
Correlations Between ESL Scores and Demographic Factors

	AGE	GENDER	ORIGIN	ESLSCORE
Age	----	-.311	-.142	-.078
Gender	----	----	-.278	.106
Origin	----	----	----	-.249
ESLScore	----	----	----	----

Results indicate no significant correlations between ESL scores and demographic factors. However, results do show a low association (-.249) between ESL scores and country of origin.

As previously stated, most ESL students originate from Thailand and Saudi Arabia and the over half of TOEFL students originate from China. Therefore, it appears that culture may play a part in academic preparedness.

The demographic factors and TOEFL student scores are presented in Table 17.

Table 17:
Correlations Between TOEFL Scores and Demographic Factors

	AGE	GENDER	ORIGIN	TOEFL
Age	----	-.292**	.068	-.217*
Gender	----	----	-.235**	.188
Origin	----	----	----	-.421**
TOEFL	----	----	----	----

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Results indicate that TOEFL scores and age had a low association (.217*) at $p<.05$. The correlations also show a moderate association (.421**) at $p<.01$ for TOEFL scores and country of origin. Therefore, results indicate that demographic factors, age and country of origin had a significant influence (r^2 = 4.7 and 17.72 respectively) of the TOEFL students' college level success.

Finally, the last objective was to determine what relationships exist between selected demographic factors of TOEFL and ESL students who chose Career and Technical Education as their graduate major. The ESL students ($n=6$) consisted of five males and one female, ranging in age from 26 to 38, with 50% originating from Saudi Arabia (Appendix C-1). The TOEFL students (n=14) consisted of four males and 10 females, ranging in age from 23 to 44, with over one-half (57.1%) originating from China (Appendix C-2). A correlation between ESL scores and TOEFL scores and each groups' demographic factors are shown in Table 18 and Table 19, respectively.

Table 18:
Correlations Between ESL Scores and Demographic Factors of Career and Technical Education Students

	AGE	GENDER	ORIGIN	ESLSCORE
Age	----	-.137	.263	.280
Gender	----	----	.447	.210
Origin	----	----	----	-.235
ESLScore	----	----	----	----

Results indicate that ESL students show low association in age, gender, and country of origin (Table 18). Although not significant, it appears that demographic factors, age, gender, and country of origin had some influence (r^2=7.84, 4.41. and 5.29 respectively) in the success of Career and Technical Education majors who were admitted into their programs after completing ESL classes.

Table 19:
Correlations Between TOEFL Scores and Demographic Factors of Career and Technical Education Students

	AGE	GENDER	ORIGIN	TOEFL
Age	----	-.242	.143	-.235
Gender	----	----	-.454	-.033
Origin	----	----	----	-.159
TOEFL	----	----	----	----

TOEFL students show a low association to age and country of origin (r^2=5.29 and 2.25 respectively) but gender shows only a negligible association (r^2=0.9) as shown in Table 19. From the results, it would appear that demographic factors had some influence in whether international students take ESL classes or seek admission through TOEFL scores into the Career and Technical Education program.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the success/academic preparedness of international students who are admitted into Career and Technical Education and five other selected programs at Marshall University. Success was determined by first and last GPA's and whether students completed their respective programs of study. The study also sought to determine whether students who completed ESL classes achieve greater success than students who are admitted into graduate programs using TOEFL scores for admission.

Since the sample of 126 students from 22 different countries was the subject of this study, the researcher was interested in determining if demographic factors played a role in academic preparedness. The results indicate that over half (63.7%) of all international students in this study were from China, Japan, and Thailand. The gender of all students was evenly distributed and a mean age of 29 was shown. The data show that ESL students (n=39) most frequently originated from Thailand or Saudi Arabia. Gender among ESL students was reported as male (18) and female (21), with a mean age of 29. The majority of TOEFL students (n=86) originated from China (58.1%). TOEFL students' gender was also evenly distributed with males (51.2%) and females (48.7%), with a mean age of 29. Based on these findings, it is suggested that an ESL student would be typically from Thailand or Saudi Arabia, approximately 29 years of age, with gender not being a determining factor. The typical TOEFL student would be from China, approximately 29 years old and gender would also not be a determinate factor. The study conducted by Ayers and Quattlebaum (1992) did show gender (60 males and 7 females) as a factor in their study although no significant differences between males and females were found. The study conducted by Spitzer (2000) found non-traditional students and females perform better academically and are more decided about their career goals.

Since Career and Technical Education was a major point of interest for the researcher, the first and last GPA's of those students was compared to the other five selected majors. The results indicated that Career and Technical Education students (n=20) have higher first GPA (3.749) and last GPA (3.858) than all other selected majors. The results indicated that Journalism majors acquired the lowest first GPA (3.381) and Communication Studies resulted in the lowest last GPA (3.367). However, these GPA's are accepted in the eyes of Marshall University. This leads the researcher to believe that Career and Technical Education majors are academically prepared for college level studies and possibly could have been in the work force prior to continuing their academic careers and demographic factors may have played a role in this particular program, which will be discussed later.

In order to determine the relationship of students who are admitted through TOEFL scores and those admitted after taking ESL classes, Davis' (1971) conventions

were used to describe the measures of association. A very strong association is measured at .70 or higher, moderate between .30 and .49, and low association at .10 to .29. Results were obtained using Pearson's Product-Moment correlation showing the TOEFL scores had a low association (.266*) at p (< .05) indicating that TOEFL students were academically prepared during their first semester at Marshall University, contradicting the study of Ayers and Quattlebaum (1992) that TOEFL scores were not an effective predictor of academic success. However, it was reported that TOEFL students showed less than negligible association for last GPA (.009) indicating a decrease in GPA throughout the length of their studies.

The students who completed ESL classes prior to admission into their respective graduate degree programs showed low association (.127) in their first GPA and negligible association (.029) in their last GPA. The ESL students also showed a decrease in GPA throughout their studies. These results in the decrease of both TOEFL and ESL students GPA's throughout the course of their studies would lead the researcher to believe that as the students progressed further into their programs, the more difficult the course work became or other mitigating factors, unknown to the researcher, played a role in this decrease.

A concern of the researcher after reviewing literature was attrition rates among international students. The researcher addressed this limitation on outcomes of why students do not complete their program of study. Many factors can be attributed to this such as, VISA expirations, availability of jobs, financing, family needs and concerns or other factors beyond the student's control. Rosberg's (1983) study found high attrition rate among ESL students to be significant and require greater attention. This study sought to determine if students who entered Marshall University's graduate degree programs through TOEFL scores had a higher success of completion rate than those admitted through ESL classes. The results support this objective. TOEFL students had a successful completion rate of 72.1% and ESL students completed their programs at a rate of 69.2%. Thus, attrition rates in this study were low for both groups.

As previously stated, the researcher was interested in determining what relationships exist between demographic factors and the international students in this convenient sample. The two groups of students (TOEFL and ESL) were separated to correlate the relationships in each group of interest. ESL students showed a low association (-.249) between their scores and country of origin, suggesting that culture may play a role in academic preparedness. Results also showed that country of origin of TOEFL students had a moderate association (.421**) at p (<. 01), suggesting culture also plays a key role in academic preparedness. These results support studies by Bosher and Rowekamp (1992) and Rance-Roney (1995), indicating L1 plays an important role in academic success/preparedness. Results also show the age of TOEFL students had a low association (.217*) at p (<. 05), indicating age was also a factor of TOEFL students in academic preparedness. The mode for TOEFL students with regards to age was 24 with a mean of 29 indicating TOEFL students may enter graduate degree programs at an earlier age than ESL students who mode for age was 29. Therefore, it is suggested that TOEFL students may enter graduate school immediately following undergraduate studies,

whereas, ESL students may join the work force for a short time prior to admission to graduate school.

Finally, since Career and Technical Education majors are a focus of this study, demographic factors were also correlated for this program. The last objective was to determine what relationships exist between selected demographic factors of TOEFL and ESL students who chose Career and Technical Education as their graduate major. Results suggest that the typical ESL student in this program consisted of a male, aged 29 from Saudi Arabia (Appendix C-1). The results also indicated that a typical TOEFL student in Career and Technical Education was female, aged 26 and from China (AppendixC-2). Both ESL and TOEFL profiles are representative of the entire sample excluding TOEFL gender.

Conclusions

Based on the findings the following conclusions were made from the study:

1) International students that chose Career and Technical Education as their course of study had higher first and last GPA's than all other graduate program majors, which leads the researcher to believe that these students may have been in the work force prior to continuing their studies and age could be a factor in this particular program.

2) Both TOEFL and ESL students had low association in their first GPA's with TOEFL students showing significant levels. This suggests that both groups are academically prepared for college level studies.

3) TOEFL students showed less than negligible association with their last GPA's and TOEFL scores, which leads the researcher to conclude that TOEFL students decrease in their GPA throughout their studies, possibly due to more intensive content areas of study in their respective majors.

4) ESL students maintained their GPA's throughout their course of study showing a negligible association suggesting that there is little fluctuation of their GPA's throughout the course of their studies.

5) Successful completion for both TOEFL and ESL students is similar. The TOEFL students were slightly higher in completion rates than the ESL students, therefore indicating low attrition rates for both groups.

6) The majority of ESL students originated from Thailand and Saudi Arabia and TOEFL students from China and Japan, which the researcher would suggest that culture might play an important role in college level success.

7) Both male and female students were equally represented in the study indicating that gender was not a factor of academic success in their respective programs of study.

8) The range in age was similar in both groups, however the TOEFL students showed enrolling in graduate degree programs at a more traditional age suggesting admission immediately after undergraduate studies. Whereas, ESL students enrolled at a more non-traditional age possibly due to entering the work force prior to admission to graduate school.

Recommendations

1) It is hoped that the data and information will initiate a framework for future research efforts that will improve and strengthen the role and effectiveness of admission criteria for graduate students regarding their academic success.

2) A similar study should be replicated at different universities across the United States and compare results.

3) The ESL program should focus on implementing an additional class of American Culture as part of their curriculum instead of offering it as an elective course since the students' culture may be a factor in their success.

4) The literature review indicated that the ESL program may need to focus more on Oral Communication classes that will allow greater success in the college level classroom.

5) Major attention may be placed on ESL classes to conduct settings similar to those graduate classroom settings.

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APPENDIX

APPENDIX A-1

Country of Origin of Entire Sample

Statistics
ORIGIN

N	Valid	124
	Missing	2

ORIGIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	China	56	44.4	45.2	45.2
	Japan	12	9.5	9.7	54.8
	Thailand	11	8.7	8.9	63.7
	Saudi Arabia	9	7.1	7.3	71.0
	Taiwan	8	6.3	6.5	77.4
	India	8	6.3	6.5	83.9
	Spain	4	3.2	3.2	87.1
	Egypt	2	1.6	1.6	88.7
	Fourteen Other Countries	14	11.1	11.3	100.0
	Total	124	98.4	100.0	
Missing	System	2	1.6		
Total		126	100.0		

14 Other Countries

Bolivia
Brazil
Chile
Columbia
Madagascar
Malaysia
Nepal
Nicaragua
Qatar
South Korea
Turkey
United Kingdom
U.S.S.R.
Venezuela

APPENDIX A-2

Gender of Entire Sample

Statistics
GENDER

N	Valid	126
	Missing	0

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	62	49.2	49.2	49.2
	female	64	50.8	50.8	100.0
	Total	126	100.0	100.0	

APPENDIX A-3

Age of Entire Sample

Statistics
AGE

N	Valid	126
	Missing	0
Mean		29.43
Median		29.00
Mode		29

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23	4	3.2	3.2	3.2
	24	15	11.9	11.9	15.1
	25	11	8.7	8.7	23.8
	26	8	6.3	6.3	30.2
	27	7	5.6	5.6	35.7
	28	13	10.3	10.3	46.0
	29	18	14.3	14.3	60.3
	30	8	6.3	6.3	66.7
	31	9	7.1	7.1	73.8
	32	7	5.6	5.6	79.4
	33	3	2.4	2.4	81.7
	34	6	4.8	4.8	86.5
	35	4	3.2	3.2	89.7
	36	2	1.6	1.6	91.3
	37	4	3.2	3.2	94.4
	38	1	.8	.8	95.2
	39	1	.8	.8	96.0
	40	1	.8	.8	96.8
	41	1	.8	.8	97.6
	43	1	.8	.8	98.4
	44	1	.8	.8	99.2
	47	1	.8	.8	100.0
	Total	126	100.0	100.0	

Appendix B-1

TOEFL Concordance Table Total Score – Score Comparison

Paper-based Total	Computer-based Total	Paper-based Total	Computer-based Total	Paper-based Total	Computer-based Total
677	300	523	193	370	77
673	297	520	190	367	73
670	293	517	187	363	73
667	290	513	183	360	70
663	287	510	180	357	70
660	287	507	180	353	67
657	283	503	177	350	63
653	280	500	173	347	63
650	280	497	170	343	60
647	277	493	167	340	60
643	273	490	163	337	57
640	273	487	163	333	57
637	270	483	160	330	53
633	267	480	157	327	50
630	267	477	153	323	50
627	263	473	150	320	47
623	263	470	150	317	47
620	260	467	147	313	43
617	260	463	143	310	40
613	257	460	140		
610	253	457	137		
607	253	453	133		
603	250	450	133		
600	250	447	130		
597	247	443	127		
593	243	440	123		
590	243	437	123		
587	240	433	120		
583	237	430	117		
580	237	427	113		
577	233	423	113		
573	230	420	110		
570	230	417	107		
567	227	413	103		
563	223	410	103		
560	220	407	100		
557	220	403	97		
553	217	400	97		
550	213	397	93		
547	210	393	90		
543	207	390	90		
540	207	387	87		
537	203	383	83		
533	200	380	83		
530	197	377	80		
527	197	373	77		

Source: Educational Testing Service

Appendix B-2

The Relationship Among Standard Scores and Percentiles

ETS Score	Percentiles	ETS	Percentiles
800	99.87	600	84.13
790	99.81	590	81.59
780	99.74	580	78.81
770	99.65	570	75.80
760	99.53	560	72.57
750	99.38	550	69.15
740	99.18	540	65.54
730	98.93	530	61.79
720	98.61	520	57.93
710	98.21	510	53.98
700	97.72	500	50.00
690	97.13	490	46.02
680	96.41	480	42.07
670	95.54	470	38.21
660	94.52	460	34.46
650	93.32	450	30.85
640	91.92	440	27.43
630	90.32	430	24.20
620	88.49	420	21.19
610	86.43	410	18.41

Source: Sax 1997

APPENDIX C-1

ESL Students in Career & Technical Education

Statistics

		ORIGIN	GENDER	AGE
N	Valid	6	6	6
	Missing	0	0	0

Frequency Table

ORIGIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Japan	1	16.7	16.7	16.7
	Saudi Arabia	3	50.0	50.0	66.7
	Taiwan	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	5	83.3	83.3	83.3
	female	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26	1	16.7	16.7	16.7
	28	1	16.7	16.7	33.3
	29	2	33.3	33.3	66.7
	31	1	16.7	16.7	83.3
	38	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

APPENDIX C-2

TOEFL Students in Career and Technical Education

Statistics

		ORIGIN	GENDER	AGE
N	Valid	14	14	14
	Missing	0	0	0

ORIGIN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	China	8	57.1	57.1	57.1
	Japan	3	21.4	21.4	78.6
	Taiwan	2	14.3	14.3	92.9
	Fourteen Other Countries	1	7.1	7.1	100.0
	Total	14	100.0	100.0	

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	4	28.6	28.6	28.6
	female	10	71.4	71.4	100.0
	Total	14	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23	1	7.1	7.1	7.1
	25	1	7.1	7.1	14.3
	26	3	21.4	21.4	35.7
	28	1	7.1	7.1	42.9
	29	2	14.3	14.3	57.1
	31	2	14.3	14.3	71.4
	36	1	7.1	7.1	78.6
	37	2	14.3	14.3	92.9
	44	1	7.1	7.1	100.0
	Total	14	100.0	100.0	

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